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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,173	07/28/2000	Larry Y.L. Mo	15-UL-5310	2991

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EXAMINER
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NGUYEN, NHON D

ART UNIT	PAPER NUMBER
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2179

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/628,173

Applicant(s)

MO ET AL.

Examiner

Nhon (Gary) D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 5, 11-15 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 11-15 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This communication is responsive to amendment, filed 03/04/2005.
2. Claims 1, 5, 11-15 and 18 are pending in this application. Claims 1 and 14 are independent claims. In this amendment, claims 2-4, 6-10, 16, 17 and 19-32 are canceled, claims 1, 5, 11-15 and 18 are amended, and no claim is added. This action is made final.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagarajan (US 6,665,098).

As per claims 1 and 14, Nagarajan teaches an imaging system comprising:

a display monitor (col. 4, line 53);

an operator interface comprising first control input device for activating adaptive grayscale adjustment (e.g., col. 6, lines 52-67; background suppression grayscale level adjustments), a second control input device for setting gain, a third control input device for setting dynamic range (e.g. col. 6, lines 44-58; ABS adjustments which include setting gain and dynamic range), a fourth control input device for activating image capture (col. 8, lines 12-16);  
a scanning subsystem for acquiring raw data (col. 2, line 66 – col. 3, line 5); and

an image processing system for processing acquired raw data to display image frame of imaging data on said display monitor (col. 2, line 66 – col. 3, line 5), said image processing system comprising memory for storing displayed image frames, grayscale mappings, upper and lower grayscale levels for use in adaptive grayscale adjustment, gain settings, and dynamic range settings (e.g. col. 6, line 44 – col. 7, line 15), and computer programmed to perform the following steps:

(a) controlling said display monitor to display an image frame imaging data derived from acquired raw data processed in accordance with the grayscale mapping, the gain setting and the dynamic range setting currently stored in said memory (col. 4, line 62 – col. 5, line 30);

(b) monitoring the state of said first control input device to detect a change in the state of said first control input device corresponding to activation of adaptive grayscale adjustment (col. 5, lines 31-44 and col. 6, lines 52-67);

(c) in response to detection of such a change in the state of said first control input device adjusting the contrast of said image frame by performing adaptive grayscale adjustment using the upper and lower grayscale levels currently stored in said memory, and controlling said display monitor to display said contrast-adjusted version of said image frame (e.g., col. 6, lines 52-67);

(d) monitoring the state of said second and third control input devices, subsequent to said change in the state of said first control input device, to detect a change the state of said second or third control input devices that results in a second gain setting different than said first gain setting or a second dynamic range setting different than said first dynamic range setting (e.g. col. 6, lines 44-58; ABS adjustments which include setting gain and dynamic range). Nagarajan does not explicitly disclose that the monitoring process to be accomplished during a predetermined

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time period. Examiner, however, takes Official Notice that a monitoring process to be accomplished during a first predetermined time period would have been obvious to one of the skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a predetermined time period in Nagarajan's monitoring process since it would have helped the system to determine the adjustment trend more accurate.

(e) in response to detection of such a change in the state of said second or third control input device, further adjusting the contrast of said image frame in accordance with said changed gain or dynamic range setting, and controlling said display monitor to display said further contrast-adjusted version of said image frame (e.g., col. 6, lines 44-67);

(f) monitoring the states of said second, third and fourth control input devices to detect whether either of the following conditions is satisfied: the changed state of said second or third control input device is stabilized for a second predetermined time period immediately subsequent to said change in the state of said second or third control input device before any other system control change is made by the operator (e.g. col. 6, lines 44-58; ABS adjustments which include setting gain and dynamic range); or the state of said fourth control input device is changed to a state corresponding to activation of an image capture operation while the changed state of said second and/or third control input device is still in effect (col. 8, lines 12-16);

(g) if either of said conditions is satisfied, analyzing the pixel intensity histogram of said further contrast-adjusted version of said image frame to determine the operator-achieved upper and lower grayscale levels; and (h) storing said operator-achieved upper and lower grayscale levels in said memory in place of the upper and lower grayscale levels used in step (c) (col. 7, lines 1-15).

As per claim 5, said computer further programmed to generate, during a subsequent adaptive grayscale adjustment, a gray map that is a function of said stored operator-achieved upper and lower grayscale levels (e.g., col. 5, line 66 – col. 6, line 23).

As per claim 15, Nagarajan teaches the new upper grayscale level is an average of a first plurality of values, said first plurality including at least said upper grayscale level used in step (c) and said operator-achieved upper grayscale level, and said new lower grayscale level is an average of a second plurality of values, said second plurality including at least said lower grayscale level used in step (c) and said operator-achieved lower grayscale level (col. 3, lines 16-36).

5. Claims 11-13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagarajan in view of Hull et al. ("Hull", US 6,665,086).

As per claims 11 and 18, which is dependent on claim 1, Nagarajan does not disclose the computer is further programmed to store said operator-achieved upper and lower grayscale levels in association with a system user ID inputted via said operator interface. Hull discloses that at col. 4, lines 34-41. It would have been obvious to an artisan at the time of the invention to use the teaching from Hull of storing the operator-achieved upper and lower grayscale levels in association with a system user ID inputted via said operator interface in Nagarajan's system since it would allow the system to keep track of the changing records.

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As per claim 12, which is dependent on claim 11, modified Nagarajan does not disclose the computer is further programmed to store an application type or exam type in association with said operator-achieved upper and lower grayscale levels and said system user ID. Hull discloses that at col. 4, lines 42-57. It would have been obvious to an artisan at the time of the invention to use the teaching from Hull of storing an application type or exam type in association with said operator-achieved upper and lower grayscale levels and said system user ID in modified Nagarajan's system since it would allow the system to keep track of the changing records.

As per claim 13, which is dependent on claim 11, modified Nagarajan does not disclose the computer is further programmed to control said display monitor to display a message, prior to said storing step, requesting confirmation from the system user that said operator achieved upper and lower grayscale levels should be stored. Examiner takes Official Notice that displaying a confirming message before changing a parameter value is well known in computer art. It would have been obvious to an artisan at the time of the invention to add a confirming message before changing a parameter value in modified Nagarajan's system since it would prevent the user from inadvertently modifying to the image processing parameters.

### ***Response to Arguments***

6. Applicant's arguments filed 03/04/2005 have been fully considered but they are not persuasive.

Applicant argued the following:

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(a) Nagarajan does not teach a system updates the upper and lower grayscale levels for use in adaptive grayscale adjustment upon the detection of any change in the gain or dynamic range settings that either stabilizes within a predetermined period of time or is followed by an image capture control input.

(b) Referring to claim 11, Hull's text at lines 39-41 state that the user ID data is stored with each block of image data. Image data means pixel data, not image processing parameters such as upper and lower grayscale levels.

(c) Referring to claim 12, Hull's text at lines 42-57 is silent concerning storing an application type or exam type.

Examiner disagrees for the following reasons:

(a) Nagarajan does teach a system updates the upper and lower grayscale levels for use in adaptive grayscale adjustment (col. 5, lines 10-30 and col. 7, lines 1-15) upon the detection of any change in the gain or dynamic range settings (e.g. col. 6, lines 44-58; ABS adjustments which include setting gain and dynamic range) that either stabilizes within a predetermined period of time. Nagarajan does not explicitly disclose that the monitoring process to be accomplished during a predetermined time period. Examiner, however, takes Official Notice that a monitoring process to be accomplished during a first predetermined time period would have been obvious to one of skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a predetermined time period in Nagarajan's monitoring process since it would have helped the system to determine the adjustment trend more accurate.



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(b) Gray scale is associated with higher and lower pixel image; therefore, image data (or pixel data) does mean image processing parameters such as upper and lower grayscale levels.

(c) Hull does mention about the application type in line 56 and the word "applications" in line 56 does teach the language of the claim 12.

### ***Inquiries***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon (Gary) D Nguyen whose telephone number is (571)272-4139. The examiner can normally be reached on Monday - Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather R Herndon can be reached on (571)272-4136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nhon (Gary) Nguyen  
May 13, 2005

**BA HUYNH**  
**PRIMARY EXAMINER**